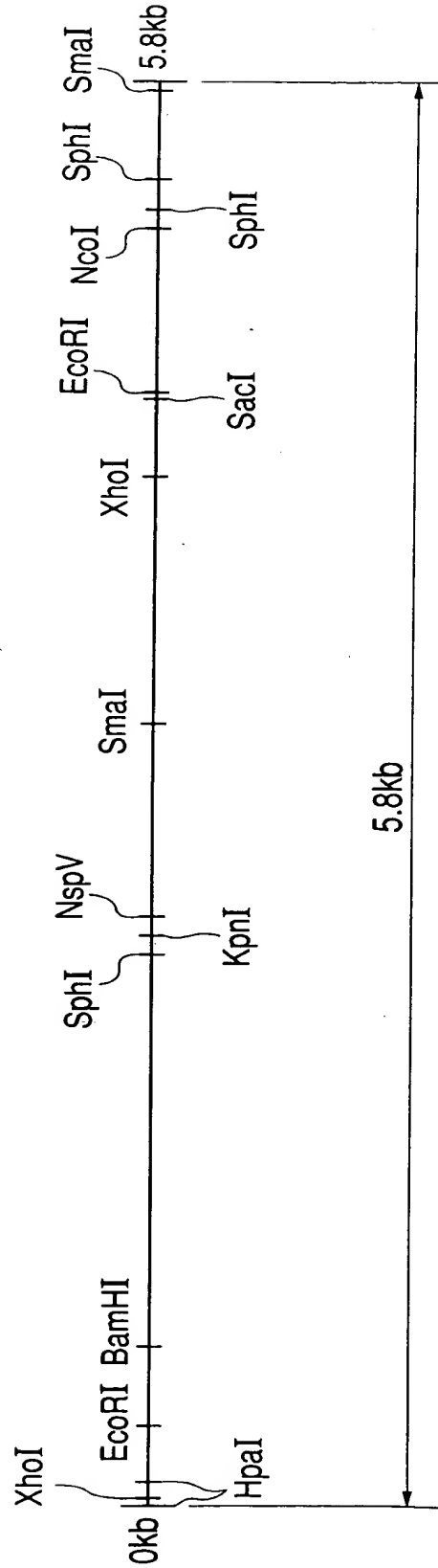


APPROVED	O.G. FIG.	
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**FIG. 1**



APPROVED	O.G. FIG.	
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## FIG. 2

FIG. 2A
FIG. 2B
FIG. 2C
FIG. 2D
FIG. 2E
FIG. 2F
FIG. 2G
FIG. 2H
FIG. 2I
FIG. 2J
FIG. 2K
FIG. 2L
FIG. 2M
FIG. 2N
FIG. 2O
FIG. 2P
FIG. 2Q
FIG. 2R

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## FIG. 2A

GATCATTTCA TCAAATGCGC TCGAGCGGGT TGCTCAAATG ATGAAAAAGG CCACCGGACA 60  
TGGGTTTCGG CACGATCGCC GCGGGGCGTT TTCCGTTCTG GTTAACCGCC ATTGTGGGTC 120  
GCGAAATTTA ACTTCGCGTC AGGGCTTTCC CTGAATTATC GAGATTTTTT GCTGCCTGGG 180  
TCGAACGTGG CACGGATGCT GCATTGAAGT CCGGCATGGA GCGACACCG ATC 233  
ATG AAT CAG CAC CCC ACC GAT CTT TCC CCG TTC GAT CCC GGC CGC AAG 281  
Met Asn Gln His Pro Thr Asp Leu Ser Pro Phe Asp Pro Gly Arg Lys  
5 10 15  
TGC GTC CGC GTG ACC GGC ACG AAC GCG CGC GGC TTC GTC GAA TTC GAG 329  
Cys Val Arg Val Thr Gly Thr Asn Ala Arg Gly Phe Val Glu Phe Glu  
20 25 30  
CTG TCG ATC GGC GGC GCG CCG GAA CTG TGC GTC GAG CTG ACG TTG TCT 377  
Leu Ser Ile Gly Gly Ala Pro Glu Leu Cys Val Glu Leu Thr Leu Ser  
35 40 45  
CCT GCC GCC TTC GAT GCG TTC TGC CGC GAA CAG CAG GTC ACG CGG CTC 425  
Pro Ala Ala Phe Asp Ala Phe Cys Arg Glu Gln Gln Val Thr Arg Leu  
50 55 60  
GAC GTC GAA GCG AAC CCA 443  
Asp Val Glu Ala Asn Pro  
65 70

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**FIG. 2B**

TGACCTTGAGGAGCAAGAA 462

GTG ACC ATC GAG CTG AAG ACA GTC GAC ATC AAG CCG CTC CGG CAC ACC 510

Met Thr Ile Glu Leu Lys Thr Val Asp Ile Lys Pro Leu Arg His Thr

5                      10                      15

TTT GCG CAT GTC GCG CAG AAC ATC GGC GGC GAC AAG ACG GCG ACG CGC 558

Phe Ala His Val Ala Gln Asn Ile Gly Gly Asp Lys Thr Ala Thr Arg

20                      25                      30

TAC CAG GAA GGC ATG ATG GGC GCG CAG CCC CAG GAG AAC TTC CAT TAC 606

Tyr Gln Glu Gly Met Met Gly Ala Gln Pro Gln Glu Asn Phe His Tyr

35                      40                      45

CGG CCG ACC TGG GAC CCG GAC TAC GAG ATC TTC GAT CCG TCG CGC TCG 654

Arg Pro Thr Trp Asp Pro Asp Tyr Glu Ile Phe Asp Pro Ser Arg Ser

50                      55                      60

GCG ATC CGG ATG GCG AAC TGG TAC GCG TTG AAG GAT CCG CGC CAG TTC 702

Ala Ile Arg Met Ala Asn Trp Tyr Ala Leu Lys Asp Pro Arg Gln Phe

65                      70                      75                      80

TAC TAC GCG TCG TGG GCG ACC ACG CGG GCG CGC CAG CAG GAT GCG ATG 750

Tyr Tyr Ala Ser Trp Ala Thr Thr Arg Ala Arg Gln Gln Asp Ala Met

**85                      90                      95**

APPROVED	O.G. FIG.	
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## FIG. 2C

GAG TCG AAC TTC GAG TTC GTC GAA TCG CGC CGG ATG ATC GGC CTG ATG 798

Glu Ser Asn Phe Glu Phe Val Glu Ser Arg Arg Met Ile Gly Leu Met

100

105

110

CGC GAC GAC GTG GCC GCG CGG GCG CTC GAC GTG CTG GTG CCG CTG CGC 846

Arg Asp Asp Val Ala Ala Arg Ala Leu Asp Val Leu Val Pro Leu Arg

115

120

125

CAC GCC GCG TGG GGC GCG AAC ATG AAC AAC GCG CAG ATC TGC GCG CTC 894

His Ala Ala Trp Gly Ala Asn Met Asn Asn Ala Gln Ile Cys Ala Leu

130

135

140

GGC TAC GGC ACG GTG TTC ACC GCG CCC GCG ATG TTC CAT GCG ATG GAC 942

Gly Tyr Gly Thr Val Phe Thr Ala Pro Ala Met Phe His Ala Met Asp

145

150

155

160

AAC CTC GGC GTC GCG CAA TAC CTC ACG CGT CTC GCG CTC GCG ATG GCC 990

Asn Leu Gly Val Ala Gln Tyr Leu Thr Arg Leu Ala Leu Ala Met Ala

165

170

175

GAG CCC GAC GTG CTG GAG GCG GCC AAG GCG ACC TGG ACC CGC GAC GCC 1038

Glu Pro Asp Val Leu Glu Ala Ala Lys Ala Thr Trp Thr Arg Asp Ala

180

185

190

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## FIG. 2D

GCC TGG CAG CCG CTG CGC CGC TAC GTC GAG GAC ACG CTG GTC GTC GCC 1086

Ala Trp Gln Pro Leu Arg Arg Tyr Val Glu Asp Thr Leu Val Val Ala

195

200

205

GAT CCG GTC GAG CTG TTC ATC GCG CAG AAC CTC GCG CTC GAC GGC CTG 1134

Asp Pro Val Glu Leu Phe Ile Ala Gln Asn Leu Ala Leu Asp Gly Leu

210

215

220

CTG TAT CCG CTC GTC TAC GAC CGC TTC GTC GAC GAA CGG ATC GCG CTC 1182

Leu Tyr Pro Leu Val Tyr Asp Arg Phe Val Asp Glu Arg Ile Ala Leu

225

230

235

240

GAA GGC GGC TCG GCA GTC GCG ATG CTG ACC GCG TTC ATG CCC GAA TGG 1230

Glu Gly Gly Ser Ala Val Ala Met Leu Thr Ala Phe Met Pro Glu Trp

245

250

255

CAC ACC GAG TCG AAC CGC TGG ATC GAC GCG GTC GTG AAG ACG ATG GCC 1278

His Thr Glu Ser Asn Arg Trp Ile Asp Ala Val Val Lys Thr Met Ala

260

265

270

GCC GAA TCC GAC GAC AAC CGC GCG CTG CTC GCC CGC TGG ACA CGC GAC 1326

Ala Glu Ser Asp Asp Asn Arg Ala Leu Leu Ala Arg Trp Thr Arg Asp

275

280

285

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**FIG. 2E**

TGG TCC GCG CGC GCC GAG GCG GCA CTG GCA CCG GTG GCG GCA CGC GCG 1374

Trp Ser Ala Arg Ala Glu Ala Ala Leu Ala Pro Val Ala Ala Arg Ala

290

295

300

CTG CAG GAT GCC GGG CGC GCG GCG CTC GAC GAA GTG CGC GAG CAG TTC 1422

Leu Gln Asp Ala Gly Arg Ala Ala Leu Asp Glu Val Arg Glu Gln Phe

305

310

315

320

CAC GCA CGC GCG GCC AGG CTC GGC ATC GCG CTC 1455

His Ala Arg Ala Ala Arg Leu Gly Ile Ala Leu

325

330

TGACGACGGG AATCCTCCCT TAACCCAAGG AATGCCAGC 1494

ATG TCC AAC GTA TTC ATC GCC TTT CAG GCC AAT GAG GAC TCC AGA CCG 1542

Met Ser Asn Val Phe Ile Ala Phe Gln Ala Asn Glu Asp Ser Arg Pro

5

10

15

ATC GTG GAT GCG ATC GTC GCC GAC AAC CCG CGC GCG GTG GTG GTC GAG 1590

Ile Val Asp Ala Ile Val Ala Asp Asn Pro Arg Ala Val Val Val Glu

20

25

30

TCG CCC GGC ATG GTC AAG ATC GAC GCG CCG GAC CGG CTG ACG ATC CGC 1638

Ser Pro Gly Met Val Lys Ile Asp Ala Pro Asp Arg Leu Thr Ile Arg

35

40

45





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## FIG. 2G

TGG GAC AAG TGG GTC GAC CCG TTC CGC CTG ACG ATG GAT GCG TAC TGG 1994

Trp Asp Lys Trp Val Asp Pro Phe Arg Leu Thr Met Asp Ala Tyr Trp

50

55

60

AAA TAC CAG GGC GAG AAG GAA AAG AAG CTG TAC GCG GTG ATC GAC GCG 2042

Lys Tyr Gln Gly Glu Lys Glu Lys Lys Leu Tyr Ala Val Ile Asp Ala

65

70

75

80

TTC ACG CAG AAC AAC GCG TTC CTC GGC GTG AGC GAC GCC CGC TAC ATC 2090

Phe Thr Gln Asn Asn Ala Phe Leu Gly Val Ser Asp Ala Arg Tyr Ile

85

90

95

AAC GCG CTG AAG CTG TTC CTC CAG GGC GTG ACG CCG CTC GAA TAC CTC 2138

Asn Ala Leu Lys Leu Phe Leu Gln Gly Val Thr Pro Leu Glu Tyr Leu

100

105

110

GCG CAC CGC GGC TTC GCG CAT GTC GGC CGG CAC TTC ACC GGC GAG GGC 2186

Ala His Arg Gly Phe Ala His Val Gly Arg His Phe Thr Gly Glu Gly

115

120

125

GCG CGC ATC GCG TGC CAG ATG CAG TCG ATC GAC GAG CTG CGG CAC TAC 2234

Ala Arg Ile Ala Cys Gln Met Gln Ser Ile Asp Glu Leu Arg His Tyr

130

135

140

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**FIG. 2H**

CAG ACC GAA ACG CAT GCG ATG TCG ACG TAC AAC AAG TTC TTC AAC GGG 2282

Gln Thr Glu Thr His Ala Met Ser Thr Tyr Asn Lys Phe Phe Asn Gly

145

150

155

160

TTC CAT CAC TCG AAC CAG TGG TTC GAC CGC GTG TGG TAC CTG TCG GTG 2330

Phe His His Ser Asn Gln Trp Phe Asp Arg Val Trp Tyr Leu Ser Val

165

170

175

CCG AAG TCG TTC TTC GAG GAC GCG TAT TCG TCG GGG CCG TTC GAG TTC 2378

Pro Lys Ser Phe Phe Glu Asp Ala Tyr Ser Ser Gly Pro Phe Glu Phe

180

185

190

CTG ACC GCG GTC AGC TTC TCG TTC GAA TAC GTG CTG ACG AAC CTG CTG 2426

Leu Thr Ala Val Ser Phe Ser Phe Glu Tyr Val Leu Thr Asn Leu Leu

195

200

205

TTC GTG CCG TTC ATG TCG GGC GCC GCC TAC AAC GGT GAC ATG TCG ACC 2474

Phe Val Pro Phe Met Ser Gly Ala Ala Tyr Asn Gly Asp Met Ser Thr

210

215

220

GTC ACG TTC GGC TTC TCC GCG CAG TCG GAC GAA TCG CGT CAC ATG ACG 2522

Val Thr Phe Gly Phe Ser Ala Gln Ser Asp Glu Ser Arg His Met Thr

225

230

235

240

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## FIG. 21

CTC GGC ATC GAA TGC ATC AAG TTC CTG CTC GAA CAG GAC CCG GAC AAC 2570

Leu Gly Ile Glu Cys Ile Lys Phe Leu Leu Glu Gln Asp Pro Asp Asn

245

250

255

GTG CCG ATC GTG CAG CGC TGG ATC GAC AAG TGG TTC TGG CGC GGC TAC 2618

Val Pro Ile Val Gln Arg Trp Ile Asp Lys Trp Phe Trp Arg Gly Tyr

260

265

270

CGG CTG CTG ACG CTG GTC GCG ATG ATG ATG GAC TAC ATG CAG CCC AAG 2666

Arg Leu Leu Thr Leu Val Ala Met Met Met Asp Tyr Met Gln Pro Lys

275

280

285

CGC GTG ATG AGC TGG CGC GAG TCG TGG GAG ATG TAC GCC GAG CAG AAC 2714

Arg Val Met Ser Trp Arg Glu Ser Trp Glu Met Tyr Ala Glu Gln Asn

290

295

300

GGC GGC GCG CTG TTC AAG GAT CTC GCG CGC TAC GGC ATT CGC GAG CCG 2762

Gly Gly Ala Leu Phe Lys Asp Leu Ala Arg Tyr Gly Ile Arg Glu Pro

305

310

315

320

AAG GGC TGG CAG GAC GCC TGC GAA GGC AAG GAT CAC ATC AGC CAC CAG 2810

Lys Gly Trp Gln Asp Ala Cys Glu Gly Lys Asp His Ile Ser His Gln

325

330

335

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## FIG. 2J

GCG TGG TCG ACG TTC TAC GGC TTC AAC GCG GCC TCG GCG TTC CAC ACC 2858

Ala Trp Ser Thr Phe Tyr Gly Phe Asn Ala Ala Ser Ala Phe His Thr

340

345

350

TGG GTG CCG ACC GAA GAC GAA ATG GGC TGG CTG TCG GCG AAG TAT CCC 2906

Trp Val Pro Thr Glu Asp Glu Met Gly Trp Leu Ser Ala Lys Tyr Pro

355

360

365

GAC TCG TTC GAC CGC TAC TAC CGC CCG CGC TTC GAT CAC TGG GGC GAG 2954

Asp Ser Phe Asp Arg Tyr Tyr Arg Pro Arg Phe Asp His Trp Gly Glu

370

375

380

CAG GCC AGG GCC GGC AAC CGC TTC TAC ATG AAG ACG CTG CCG ATG CTG 3002

Gln Ala Arg Ala Gly Asn Arg Phe Tyr Met Lys Thr Leu Pro Met Leu

385

390

395

400

TGC CAG ACG TGC CAG ATC CCG ATG CTG TTC ACC GAG CCG GGC AAC CCG 3050

Cys Gln Thr Cys Gln Ile Pro Met Leu Phe Thr Glu Pro Gly Asn Pro

405

410

415

ACG AAG ATC GGC GCG CGC GAA TCG AAC TAC CTC GGC AAC AAG TTC CAC 3098

Thr Lys Ile Gly Ala Arg Glu Ser Asn Tyr Leu Gly Asn Lys Phe His

420

425

430

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**FIG. 2K**

TTC TGC AGC GAC CAC TGC AAG GAC ATC TTC GAT CAC GAG CCG CAG AAA 3146

Phe Cys Ser Asp His Cys Lys Asp Ile Phe Asp His Glu Pro Gln Lys

435

440

445

TAC GTG CAG GCG TGG CTG CCG GTG CAC CAG ATC CAT CAG GGC AAC TGC 3194

Tyr Val Gln Ala Trp Leu Pro Val His Gln Ile His Gln Gly Asn Cys

450

455

460

TTC CCG CCC GAT GCG GAC CCG GGC GCG GAG GGC TTC GAT CCG CTC GCC 3242

Phe Pro Pro Asp Ala Asp Pro Gly Ala Glu Gly Phe Asp Pro Leu Ala

465

470

475

480

CCG GTG CTC GAC TAC TAC GCG GTG ACG ATG GGC CGC GAC AAC CTC GAT 3290

Ala Val Leu Asp Tyr Tyr Ala Val Thr Met Gly Arg Asp Asn Leu Asp

485

490

495

TTC GAC GGC TCG GAA GAC CAG AAG AAC TTC GCG GCG TGG CGC GGC CAG 3338

Phe Asp Gly Ser Glu Asp Gln Lys Asn Phe Ala Ala Trp Arg Gly Gln

500

505

510

GCC ACG CGC AAC

3350

Ala Thr Arg Asn

515

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## FIG. 2L

TGACCCGCAA CGACAAGCAA TCTTGACGAG GGCCCGCGAA GCGCCGATGC GCGAACGCGG 3410

GCCGACAGGA GACAAAC 3427

ATG GCC GTC ATC GCG CTC AAA CCC TAC GAC TTC CCG GTG AAG GAT GCC 3475

Met Ala Val Ile Ala Leu Lys Pro Tyr Asp Phe Pro Val Lys Asp Ala

5                      10                      15

GTC GAG AAG TTT CCG GCG CCG CTG CTC TAC GTG TGC TGG GAA AAC CAT 3523

Val Glu Lys Phe Pro Ala Pro Leu Leu Tyr Val Cys Trp Glu Asn His

20                      25                      30

CTG ATG TTC CCG GCG CCG TTC TGC CTG CCG CTG CCG CCC GAC ATG CCG 3571

Leu Met Phe Pro Ala Pro Phe Cys Leu Pro Leu Pro Pro Asp Met Pro

35                      40                      45

TTC GGC GCG CTG GCC GGC GAC GTG CTG CCG CCC GTC TAC GGC TAT CAC 3619

Phe Gly Ala Leu Ala Gly Asp Val Leu Pro Pro Val Tyr Gly Tyr His

50                      55                      60

CCC GAC TTC GCG AAG ATC GAC TGG GAT CGC GTC GAG TGG TTC CGG TCG 3667

Pro Asp Phe Ala Lys Ile Asp Trp Asp Arg Val Glu Trp Phe Arg Ser

65                      70                      75                      80

GGC GAG CCG TGG GCG CCG GAC CCG GCG AAG AGC CTG GCC GGC AAC GGC 3715

Gly Glu Pro Trp Ala Pro Asp Pro Ala Lys Ser Leu Ala Gly Asn Gly

85 90 95

APPROVED	O.G. FIG.	
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## FIG. 2M

CTC GGC CAC AAG GAC CTG ATC AGC TTC CGC ACG CCC GGC CTC GAC GGC 3763

Leu Gly His Lys Asp Leu Ile Ser Phe Arg Thr Pro Gly Leu Asp Gly

100

105

110

CTC GGC GGC GCG AGC TTC

3781

Leu Gly Gly Ala Ser Phe

115

TGACCGCCAC GCGGACGAGC GAACCATC

3809

ATG AGC CAC CAA CTT ACC ATC GAG CCG CTG GGC GTC ACG ATC GAG GTC 3857

Met Ser His Gln Leu Thr Ile Glu Pro Leu Gly Val Thr Ile Glu Val

5

10

15

GAG GAA GGA CAG ACG ATG CTC GAT GCC GCG CTG CGC CAG GGC ATC TAC 3905

Glu Glu Gly Gln Thr Met Leu Asp Ala Ala Leu Arg Gln Gly Ile Tyr

20

25

30

ATT CCG CAC GCG TGC TGT CAC GGG CTG TGC GGC ACC TGC AAG GTC GCC 3953

Ile Pro His Ala Cys Cys His Gly Leu Cys Gly Thr Cys Lys Val Ala

35

40

45

GTG CTC GAC GGC GAG ACC GAT CCC GGC GAT GCG AAC CCG TTC GCG CTG 4001

Val Leu Asp Gly Glu Thr Asp Pro Gly Asp Ala Asn Pro Phe Ala Leu

50

55

60

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**FIG. 2N**

ATG GAT TTC GAG CGC GAG GAA GGC AAG GCG CTC GCG TGC TGC GCG ACG 4049

Met Asp Phe Glu Arg Glu Glu Gly Lys Ala Leu Ala Cys Cys Ala Thr

65                      70                      75                      80

CTG CAG GCC GAC ACC GTG ATC GAG GCC GAC GTC GAC GAG GAG CCG GAT 4097

Leu Gln Ala Asp Thr Val Ile Glu Ala Asp Val Asp Glu Glu Pro Asp

85                      90                      95

CCG GAA ATC ATC CCG GTC AGG GAC TTC GCG GCC GAC GTC ACG CGC ATC 4145

Ala Glu Ile Ile Pro Val Arg Asp Phe Ala Ala Asp Val Thr Arg Ile

100                      105                      110

GAA CAG CTC ACG CCG ACC ATC AAG TCG ATC CGC CTG AAG CTG TCG CAG 4193

Glu Gln Leu Thr Pro Thr Ile Lys Ser Ile Arg Leu Lys Leu Ser Gln

115                      120                      125

CCG ATC CGC TTC CAG GCG GGC CAG TAC GTG CAG CTC GAG ATT CCC GGC 4241

Pro Ile Arg Phe Gln Ala Gly Gln Tyr Val Gln Leu Glu Ile Pro Gly

130                      135                      140

CTC GGG CAG AGC CGC GCG TTC TCG ATC GCG AAC GCG CCG GCC GAC GTC 4289

Leu Gly Gln Ser Arg Ala Phe Ser Ile Ala Asn Ala Pro Ala Asp Val

145                      150                      155                      160



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## FIG. 20

CGC GCC ACC GGC GAG ATC GAA CTG AAC GTG CGG CAG GTG CCG GGC GGG 4337

Ala Ala Thr Gly Glu Ile Glu Leu Asn Val Arg Gln Val Pro Gly Gly

165

170

175

CTC GGC ACG GGC TAC CTG CAC GAG CAA CTG GCG ACG GGC GAG CGC GTG 4385

Leu Gly Thr Gly Tyr Leu His Glu Gln Leu Ala Thr Gly Glu Arg Val

180

185

190

CGC CTG TCG GGC CCG TAC GGC CGC TTC TTC GTG CGT CGC TCG GCC GCG 4433

Arg Leu Ser Gly Pro Tyr Gly Arg Phe Phe Val Arg Arg Ser Ala Ala

195

200

205

CGG CCG ATG ATC TTC ATG GCC GGC GGG TCG GGG CTG TCG AGC CCG CGC 4481

Arg Pro Met Ile Phe Met Ala Gly Gly Ser Gly Leu Ser Ser Pro Arg

210

215

220

TCG ATG ATC GCG GAC CTG CTC GCA AGC GGC GTC ACC GCG CCG ATC ACG 4529

Ser Met Ile Ala Asp Leu Leu Ala Ser Gly Val Thr Ala Pro Ile Thr

225

230

235

240

CTG GTC TAC GGT CAG CGC AGC GCG CAG GAG CTC TAC TAC CAC GAC GAA 4577

Leu Val Tyr Gly Gln Arg Ser Ala Gln Glu Leu Tyr Tyr His Asp Glu

245

250

255

TTC CGC GCG CTG GCC GAA CGC CAT CCG AAC TTC ACG TAC GTG CCG GCG 4625

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## FIG. 2P

Phe Arg Ala Leu Ala Glu Arg His Pro Asn Phe Thr Tyr Val Pro Ala

260

265

270

CTG TCC GAA GGC GCA CCG CAC GCG GGC GGC GAC GTC GCG CAA GGG TTC 4673

Leu Ser Glu Gly Ala Pro His Ala Gly Gly Asp Val Ala Gln Gly Phe

275

280

285

GTG CAC GAC GTC GCG AAG GCA CAT TTC GGC GGC GAC TTC TCC GGG CAC 4721

Val His Asp Val Ala Lys Ala His Phe Gly Gly Asp Phe Ser Gly His

290

295

300

CAG GCG TAC CTG TGC GGG CCG CCC GCG ATG ATC GAC GCG TGC ATC ACG 4769

Gln Ala Tyr Leu Cys Gly Pro Pro Ala Met Ile Asp Ala Cys Ile Thr

305

310

315

320

ACG CTG ATG CAG GGG CGC CTG TTC GAG CGC GAC ATC TAT CAC GAG AAG 4817

Thr Leu Met Gln Gly Arg Leu Phe Glu Arg Asp Ile Tyr His Glu Lys

325

330

335

TTC ATC TCG GCG GCC GAC GCG CAA CAG ACG CGC AGC CCG CTG TTC CGG 4865

Phe Ile Ser Ala Ala Asp Ala Gln Gln Thr Arg Ser Pro Leu Phe Arg

340

345

350

CGG GTG

4871

Arg Val

TGAC

4875

APPROVED	O.G. FIG.	
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## FIG. 2Q

ATG GAC GCG GGC CGC GTA TGC GGG ACG GTC ACG ATC GCG CAG ACC GAC 4923

Met Asp Ala Gly Arg Val Cys Gly Thr Val Thr Ile Ala Gln Thr Asp

5

10

15

GAG CGC TAT GCG TGC GTG TCC GGC GAG TCG CTG CTG GCC GGC ATG GCG 4971

Glu Arg Tyr Ala Cys Val Ser Gly Glu Ser Leu Leu Ala Gly Met Ala

20

25

30

AAA CTC GGC CGG CGC GGC ATT CCG GTC GGC TGC CTG AAC GGC GGC TGC 5019

Lys Leu Gly Arg Arg Gly Ile Pro Val Gly Cys Leu Asn Gly Gly Cys

35

40

45

GGC GTG TGC AAG GTG CGC GTG CTG CGC GGT GCG GTG CGC AAG CTC GGC 5067

Gly Val Cys Lys Val Arg Val Leu Arg Gly Ala Val Arg Lys Leu Gly

50

55

60

CCG ATC AGC CGT GCC CAT GTG AGC GCG GAA GAA GAG AAC GAC GGC TAC 5115

Pro Ile Ser Arg Ala His Val Ser Ala Glu Glu Glu Asn Asp Gly Tyr

65

70

75

80

GCG CTT GCG TGC CGC GTC GTG CCG GAC GGC GAC GTC GAA CTC GAA GTG 5163

Ala Leu Ala Cys Arg Val Val Pro Asp Gly Asp Val Glu Leu Glu Val

85

90

95

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
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**FIG. 2R**

GCC GGC CGG CTC AGG AAG CCG TTC TTC TGC GGC ATG GCA TGT GCC GGC 5211

Ala Gly Arg Leu Arg Lys Pro Phe Phe Cys Gly Met Ala Cys Ala Gly

100

105

110

ACG GCG GCG ATC AAC AAG

5229

Thr Ala Ala Ile Asn Lys

115

TAACCAGGAG GAGACTCACC ATGGGTGTGA TGCGTATTGG TCATGTCAGT CTGAAGGTGA 5289

TGGACATGGA AGCGGCGCTG CGTCATTACG TACGCGTGCT CGGCATGCAG GAAACGATGC 5349

CGCAGCGGC GGGCAACGTC TACCTGAAAT GCTGGGACGA ATGGGACAAG TATTCGCTGA 5409

TCCTGTCGCC GTCCGATCAG GCGGGGCTCA AGCATGCCGC CTACAAGGTC GAGCACGACG 5469

CCGATCTGGA TGCCTGCAG CAGCGCATCG AAGCGTACGG GATCGCGACC GAGATGCTGC 5529

CCGAAGGCGC GCTGCCGGCG GTCGGCCGCC AACTGCGGTT CCTGCTGCCG AGCGGCCATG 5589

AACTGCGGCT GTTCGCGAAG AAGGCGCTGG TGGGCACCGC GGTCGGCTCG CTGAACCCCG 5649

ATCCGTGGCC CGACGACATT CCGGGCTCGG CCGTGCACTG GCTCGACCAC TGCCTGCTGA 5709

TGTGCGAACT GAACCCGGAG GCCGGCGTGA ACCGCGTCGA GGAGAACACG CGCTTCATGG 5769

CCGAGTGTCT CGACTTCCAT CTGGCCGAGC AGGTGATGGT CGGCCCCGGC AACACGATC 5828

APPROVED	O.G. FIG.	
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## FIG. 3

Met Glu Ala Thr Pro Ile Met Asn Gln His Pro Thr Asp Leu Ser Pro  
5 10 15

Phe Asp Pro Gly Arg Lys Cys Val Arg Val Thr Gly Thr Asn Ala Arg  
20 25 30

Gly Phe Val Glu Phe Glu Leu Ser Ile Gly Gly Ala Pro Glu Leu Cys  
35 40 45

Val Glu Leu Thr Leu Ser Pro Ala Ala Phe Asp Ala Phe Cys Arg Glu  
50 55 60

Gln Gln Val Thr Arg Leu Asp Val Glu Ala Asn Pro  
65 70 75

APPROVED	O.G. FIG.	
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# **FIG. 4**

FIG. 4A
FIG. 4B
FIG. 4C

## **FIG. 4A**

Met Arg Ser Ala Ala Asn Ser Arg Ser Arg Gly Ser Thr Ser Lys Arg

5

10

15

Thr His Asp Leu Glu Glu Gln Glu Val Thr Ile Glu Leu Lys Thr Val

20

25

30

Asp Ile Lys Pro Leu Arg His Thr Phe Ala His Val Ala Gln Asn Ile

35

40

45

Gly Gly Asp Lys Thr Ala Thr Arg Tyr Gln Glu Gly Met Met Gly Ala

50

55

60

Gln Pro Gln Glu Asn Phe His Tyr Arg Pro Thr Trp Asp Pro Asp Tyr

65

70

75

80

Glu Ile Phe Asp Pro Ser Arg Ser Ala Ile Arg Met Ala Asn Trp Tyr

85

90

95

Ala Leu Lys Asp Pro Arg Gln Phe Tyr Tyr Ala Ser Trp Ala Thr Thr

100

105

110

Arg Ala Arg Gln Gln Asp Ala Met Glu Ser Asn Phe Glu Phe Val Glu

115

120

125

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## FIG. 4B

Ser Arg Arg Met Ile Gly Leu Met Arg Asp Asp Val Ala Ala Arg Ala

130

135

140

Leu Asp Val Leu Val Pro Leu Arg His Ala Ala Trp Gly Ala Asn Met

145

150

155

160

Asn Asn Ala Gln Ile Cys Ala Leu Gly Tyr Gly Thr Val Phe Thr Ala

165

170

175

Pro Ala Met Phe His Ala Met Asp Asn Leu Gly Val Ala Gln Tyr Leu

180

185

190

Thr Arg Leu Ala Leu Ala Met Ala Glu Pro Asp Val Leu Glu Ala Ala

195

200

205

Lys Ala Thr Trp Thr Arg Asp Ala Ala Trp Gln Pro Leu Arg Arg Tyr

210

215

220

Val Glu Asp Thr Leu Val Val Ala Asp Pro Val Glu Leu Phe Ile Ala

225

230

235

240

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## FIG. 4C

Gln Asn Leu Ala Leu Asp Gly Leu Leu Tyr Pro Leu Val Tyr Asp Arg

245

250

255

Phe Val Asp Glu Arg Ile Ala Leu Glu Gly Gly Ser Ala Val Ala Met

260

265

270

Leu Thr Ala Phe Met Pro Glu Trp His Thr Glu Ser Asn Arg Trp Ile

275

280

285

Asp Ala Val Val Lys Thr Met Ala Ala Glu Ser Asp Asp Asn Arg Ala

290

295

300

Leu Leu Ala Arg Trp Thr Arg Asp Trp Ser Ala Arg Ala Glu Ala Ala

305

310

315

320

Leu Ala Pro Val Ala Ala Arg Ala Leu Gln Asp Ala Gly Arg Ala Ala

325

330

335

Leu Asp Glu Val Arg Glu Gln Phe His Ala Arg Ala Ala Arg Leu Gly

340

345

350

Ile Ala Leu

355



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## FIG. 5

Met Ser Asn Val Phe Ile Ala Phe Gln Ala Asn Glu Asp Ser Arg Pro  
5 10 15

Ile Val Asp Ala Ile Val Ala Asp Asn Pro Arg Ala Val Val Val Glu  
20 25 30

Ser Pro Gly Met Val Lys Ile Asp Ala Pro Asp Arg Leu Thr Ile Arg  
35 40 45

Arg Glu Thr Ile Glu Glu Leu Thr Gly Thr Arg Phe Asp Leu Gln Gln  
50 55 60

Leu Gln Val Asn Leu Ile Thr Leu Ser Gly His Ile Asp Glu Asp Asp  
65 70 75 80

Asp Glu Phe Thr Leu Ser Trp Ser His  
85



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## FIG. 6B

Ala Arg Ile Ala Cys Gln Met Gln Ser Ile Asp Glu Leu Arg His Tyr

130

135

140

Gln Thr Glu Thr His Ala Met Ser Thr Tyr Asn Lys Phe Phe Asn Gly

145

150

155

160

Phe His His Ser Asn Gln Trp Phe Asp Arg Val Trp Tyr Leu Ser Val

165

170

175

Pro Lys Ser Phe Phe Glu Asp Ala Tyr Ser Ser Gly Pro Phe Glu Phe

180

185

190

Leu Thr Ala Val Ser Phe Ser Phe Glu Tyr Val Leu Thr Asn Leu Leu

195

200

205

Phe Val Pro Phe Met Ser Gly Ala Ala Tyr Asn Gly Asp Met Ser Thr

210

215

220

Val Thr Phe Gly Phe Ser Ala Gln Ser Asp Glu Ser Arg His Met Thr

225

230

235

240

Leu Gly Ile Glu Cys Ile Lys Phe Leu Leu Glu Gln Asp Pro Asp Asn

245

250

255

Val Pro Ile Val Gln Arg Trp Ile Asp Lys Trp Phe Trp Arg Gly Tyr

260

265

270

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## FIG. 6C

Arg Leu Leu Thr Leu Val Ala Met Met Met Asp Tyr Met Gln Pro Lys

275

280

285

Arg Val Met Ser Trp Arg Glu Ser Trp Glu Met Tyr Ala Glu Gln Asn

290

295

300

Gly Gly Ala Leu Phe Lys Asp Leu Ala Arg Tyr Gly Ile Arg Glu Pro

305

310

315

320

Lys Gly Trp Gln Asp Ala Cys Glu Gly Lys Asp His Ile Ser His Gln

325

330

335

Ala Trp Ser Thr Phe Tyr Gly Phe Asn Ala Ala Ser Ala Phe His Thr

340

345

350

Trp Val Pro Thr Glu Asp Glu Met Gly Trp Leu Ser Ala Lys Tyr Pro

355

360

365

Asp Ser Phe Asp Arg Tyr Tyr Arg Pro Arg Phe Asp His Trp Gly Glu

370

375

380

Gln Ala Arg Ala Gly Asn Arg Phe Tyr Met Lys Thr Leu Pro Met Leu

385

390

395

400

Cys Gln Thr Cys Gln Ile Pro Met Leu Phe Thr Glu Pro Gly Asn Pro

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## FIG. 6D

405	410	415	
Thr Lys Ile Gly Ala Arg Glu Ser Asn Tyr Leu Gly Asn Lys Phe His			
420	425	430	
Phe Cys Ser Asp His Cys Lys Asp Ile Phe Asp His Glu Pro Gln Lys			
435	440	445	
Tyr Val Gln Ala Trp Leu Pro Val His Gln Ile His Gln Gly Asn Cys			
450	455	460	
Phe Pro Pro Asp Ala Asp Pro Gly Ala Glu Gly Phe Asp Pro Leu Ala			
465	470	475	480
Ala Val Leu Asp Tyr Tyr Ala Val Thr Met Gly Arg Asp Asn Leu Asp			
485	490	495	
Phe Asp Gly Ser Glu Asp Gln Lys Asn Phe Ala Ala Trp Arg Gly Gln			
500	505	510	
Ala Thr Arg Asn			
515			

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## FIG. 7

Met Ala Val Ile Ala Leu Lys Pro Tyr Asp Phe Pro Val Lys Asp Ala

5

10

15

Val Glu Lys Phe Pro Ala Pro Leu Leu Tyr Val Cys Trp Glu Asn His

20

25

30

Leu Met Phe Pro Ala Pro Phe Cys Leu Pro Leu Pro Pro Asp Met Pro

35

40

45

Phe Gly Ala Leu Ala Gly Asp Val Leu Pro Pro Val Tyr Gly Tyr His

50

55

60

Pro Asp Phe Ala Lys Ile Asp Trp Asp Arg Val Glu Trp Phe Arg Ser

65

70

75

80

Gly Glu Pro Trp Ala Pro Asp Pro Ala Lys Ser Leu Ala Gly Asn Gly

85

90

95

Leu Gly His Lys Asp Leu Ile Ser Phe Arg Thr Pro Gly Leu Asp Gly

100

105

110

Leu Gly Gly Ala Ser Phe

115

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# **FIG. 8**

FIG. 8A
FIG. 8B
FIG. 8C

## **FIG. 8A**

Met Ser His Gln Leu Thr Ile Glu Pro Leu Gly Val Thr Ile Glu Val

5

10

15

Glu Glu Gly Gln Thr Met Leu Asp Ala Ala Leu Arg Gln Gly Ile Tyr

20

25

30

Ile Pro His Ala Cys Cys His Gly Leu Cys Gly Thr Cys Lys Val Ala

35

40

45

Val Leu Asp Gly Glu Thr Asp Pro Gly Asp Ala Asn Pro Phe Ala Leu

50

55

60

Met Asp Phe Glu Arg Glu Glu Gly Lys Ala Leu Ala Cys Cys Ala Thr

65

70

75

80

Leu Gln Ala Asp Thr Val Ile Glu Ala Asp Val Asp Glu Glu Pro Asp

85

90

95

Ala Glu Ile Ile Pro Val Arg Asp Phe Ala Ala Asp Val Thr Arg Ile

100

105

110

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**FIG. 8B**

Glu Gln Leu Thr Pro Thr Ile Lys Ser Ile Arg Leu Lys Leu Ser Gln

115

120

125

Pro Ile Arg Phe Gln Ala Gly Gln Tyr Val Gln Leu Glu Ile Pro Gly

130

135

140

Leu Gly Gln Ser Arg Ala Phe Ser Ile Ala Asn Ala Pro Ala Asp Val

145

150

155

160

Ala Ala Thr Gly Glu Ile Glu Leu Asn Val Arg Gln Val Pro Gly Gly

165

170

175

Leu Gly Thr Gly Tyr Leu His Glu Gln Leu Ala Thr Gly Glu Arg Val

180

185

190

Arg Leu Ser Gly Pro Tyr Gly Arg Phe Phe Val Arg Arg Ser Ala Ala

195

200

205

Arg Pro Met Ile Phe Met Ala Gly Gly Ser Gly Leu Ser Ser Pro Arg

210

215

220

Ser Met Ile Ala Asp Leu Leu Ala Ser Gly Val Thr Ala Pro Ile Thr

225

230

235

240

Leu Val Tyr Gly Gln Arg Ser Ala Gln Glu Leu Tyr Tyr His Asp Glu

245

250

255



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**FIG. 8C**

Phe Arg Ala Leu Ala Glu Arg His Pro Asn Phe Thr Tyr Val Pro Ala

260

265

270

Leu Ser Glu Gly Ala Pro His Ala Gly Gly Asp Val Ala Gln Gly Phe

275

280

285

Val His Asp Val Ala Lys Ala His Phe Gly Gly Asp Phe Ser Gly His

290

295

300

Gln Ala Tyr Leu Cys Gly Pro Pro Ala Met Ile Asp Ala Cys Ile Thr

305

310

315

320

Thr Leu Met Gln Gly Arg Leu Phe Glu Arg Asp Ile Tyr His Glu Lys

325

330

335

Phe Ile Ser Ala Ala Asp Ala Gln Gln Thr Arg Ser Pro Leu Phe Arg

340

345

350

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## FIG. 9

Met Asp Ala Gly Arg Val Cys Gly Thr Val Thr Ile Ala Gln Thr Asp

5

10

15

Glu Arg Tyr Ala Cys Val Ser Gly Glu Ser Leu Leu Ala Gly Met Ala

20

25

30

Lys Leu Gly Arg Arg Gly Ile Pro Val Gly Cys Leu Asn Gly Gly Cys

35

40

45

Gly Val Cys Lys Val Arg Val Leu Arg Gly Ala Val Arg Lys Leu Gly

50

55

60

Pro Ile Ser Arg Ala His Val Ser Ala Glu Glu Glu Asn Asp Gly Tyr

65

70

75

80

Ala Leu Ala Cys Arg Val Val Pro Asp Gly Asp Val Glu Leu Glu Val

85

90

95

Ala Gly Arg Leu Arg Lys Pro Phe Phe Cys Gly Met Ala Cys Ala Gly

100

105

110

Thr Ala Ala Ile Asn Lys

115

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## *FIG. 10*

AGTCCGCCAT GGAGGCGACA CCGATCATGA ATCAGC 36

## *FIG. 11*

CACCGACCAT GGATCAGCAC CCCACCGATC TTTC 34

## *FIG. 12*

TGCCGCCTTC CATGGGTTCT GCCGCGAACA GCAG 34

## *FIG. 13*

AGCAAGCCAT GGCCATCGAG CTGAAGACAG TCGACATCA 39

## *FIG. 14*

CCGACCATCA CCTGCTCGGC CAGATGGAAG TCGAG 35

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1  
**FIG. 15**

